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Design Overview

We are instructed to make an evaporation cooling system that responds to a water threshold and temperature and humidity sensors. A fan will turn on in response to the sensors.

The final project's design consists of the components as required by the rubric:

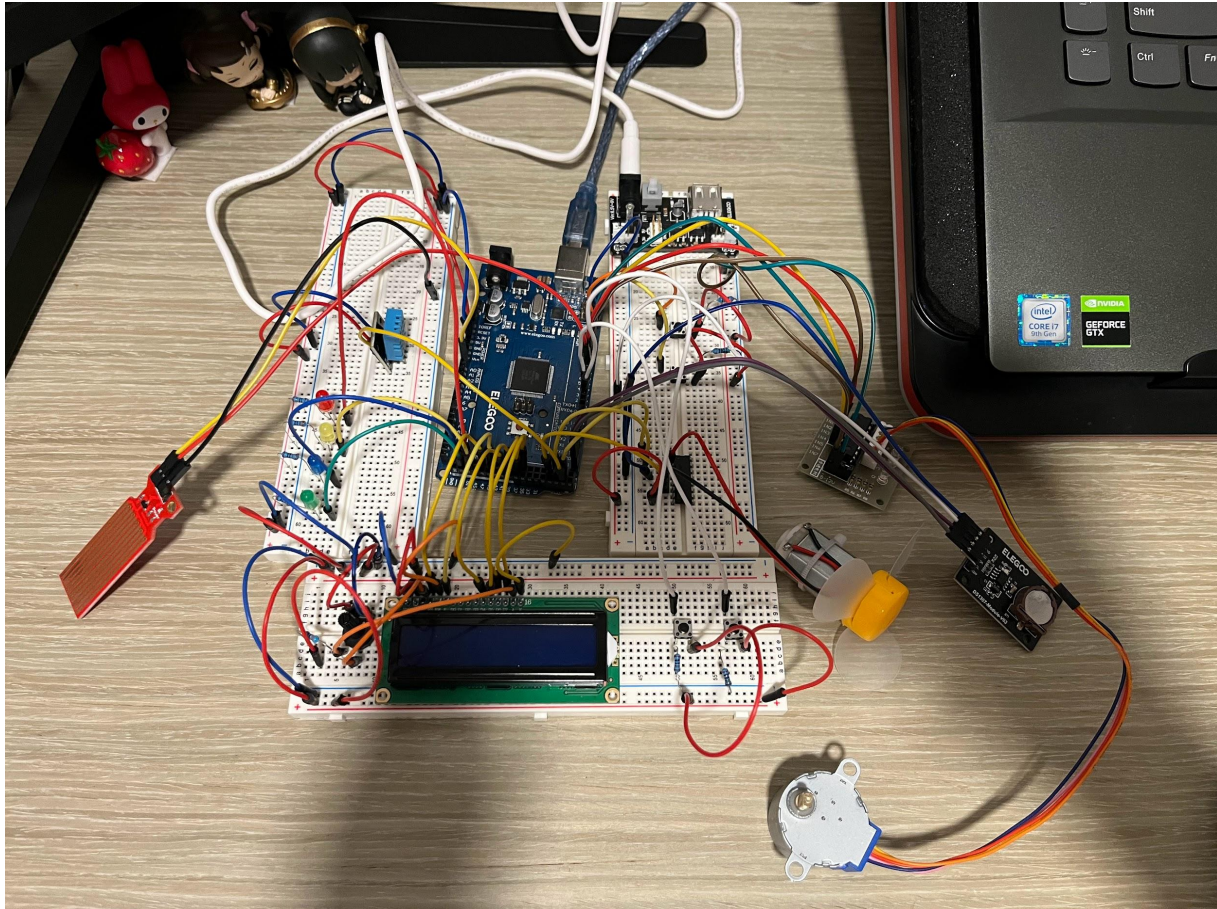
- *Water level sensor* detects the threshold of water via a sample using the ADC
- *Stepper motor* changes vent direction (clockwise or counterclockwise) via two buttons
 - Must use an external supply board and used 9V adapter to power it
- *LCD* displays messages on the status of the system
- *Real-time clock module* reports status of the system in timestamps through the serial monitor
- *DHT11 temperature and humidity sensor* monitors humidity and temperature
- *DC motor and fan blade* respond to buttons and the sensors to act as the fan motor of the evaporation cooling system
 - Also used external supply board with 9V adapter; attached to the same breadboard as the fan motor

Constraints:

- The system as a whole might require a higher voltage via an additional power supply board or battery because there is an occasional loss of power when jostling wires or after activating certain parts of the system.

Pictures and Video

Complete circuit



Video

[CPE 301 Final Project Video_Fall 2023_Barlaan_Osorio.mov](#)

Schematic and Specification Sheets

■ [Schematic.pdf](#)

■ [Atmel-2549-8-bit-AVR-Microcontroller-ATmega640-1280-1281-2560-2561_datasheet.pdf](#)

■ [Arduino-Mega-Pinout.jpg](#)

Github Repository

[CPE 301 Final Project Repository_Barlaan_Osorio](#)